We claim:

1. An apparatus for optical determination of distance to a feature, said apparatus comprising:

a) a beam generation unit for launching a reference beam on a reference path and a first beam on a first path;

b) a rotation mechanism for rotating said reference path and said first path about a center along a line of said reference path and not along a line of said first path, wherein said reference beam moves over said feature at a reference time t_r and said first beam moves over said feature and at a first time t_1;

c) a determination unit for determining a distance r from said center to said feature from an angular velocity ω of said reference beam over said feature and from said times t_r, t_1.

2. The apparatus of claim 1, wherein at least one of said reference path and said first path further comprise a non-collinear folded path portion.

3. The apparatus of claim 1, wherein said rotation mechanism comprises at least one element selected from the group consisting of mirrors, refractive elements, diffractive elements and holographic elements.

4. The apparatus of claim 1, wherein said reference path and said first path are in a common plane Σ.

5. The apparatus of claim 1, wherein said determination unit comprises a detector for detecting said reference beam and said first beam.

6. The apparatus of claim 1, wherein said beam generation unit comprises a reference source for launching said reference beam and a first source for launching said first beam.

7. The apparatus of claim 6, wherein said beam generation unit comprises an active array of sources.

8. The apparatus of claim 6, wherein said reference source and said first source have distinct generation modes for endowing said reference beam and said first beam with mutually distinguishing properties.

9. The apparatus of claim 8, wherein said distinguishing properties are selected from the group consisting of polarization, wavelength, temporal beam format and intensity.

10. The apparatus of claim 9, wherein said distinguishing properties comprise wavelength and said determination unit comprises at least one wavelength filter.

11. The apparatus of claim 9, wherein said determination unit comprises a reference detector for detecting said reference beam and a first detector for detecting said first beam.

12. The apparatus of claim 1, wherein said beam generation unit launches a second beam on a second path chosen such that said center is along a line of said second path, said rotation mechanism rotates said second path such that said second beam moves over said feature at a second time t_2, and determination unit determines said angular velocity ω of said reference beam from said times t_r, t_2.

13. The apparatus of claim 12, wherein said beam generation unit comprises a second source for launching said second beam, and wherein said second source has a distinct generation mode for endowing said second beam with a distinguishing property selected from the group consisting of polarization, wavelength, temporal beam format and intensity.

14. The apparatus of claim 12, wherein said reference path, said first path and said second path are in a common plane Σ.

15. The apparatus of claim 1, further comprising an angular velocity unit for measuring said angular velocity ω of said reference beam, said angular velocity unit being in communication with said determination unit.

16. The apparatus of claim 1, wherein said feature is selected from the group consisting of micro-structure and macro-structure.

17. An apparatus for optical determination of distance to a feature, said apparatus comprising:

a) a beam generation unit for launching a reference beam on a reference path and a first beam on a first path;

b) a rotation mechanism for rotating said reference path and said first path about a center not along a line of said reference path and not along a line of said first path, whereby said reference beam moves over said feature at a reference time t_r and said first beam moves over said feature and at a first time t_1;

c) a determination unit for determining a distance r from said center to said feature from an angular velocity ω of said reference beam over said feature and from said times t_r, t_1.

18. An apparatus for optical determination of distance to a feature, said apparatus comprising:

a) a radiation detection unit for detecting radiation on a reference path and on a first path;

b) a rotation mechanism for rotating said reference path and said first path about a center along a line of said reference path and not along a line of said first path, whereby said radiation from said feature is detected on said reference path at a at a reference time t_r and on said first path at a first time t_1;

c) a determination unit for determining a distance r from said center to said feature from an angular velocity ω of said reference path over said feature and from said times t_r, t_1.

19. A method for optical determination of distance to a feature, said method comprising:

a) launching a reference beam on a reference path and a first beam on a first path;

b) rotating said reference path and said first path about a center along a line of said reference path and not along a line of said first path, whereby said reference beam moves over said feature at a reference time t_r and said first beam moves over said feature at a first time t_1;

c) determining a distance r from said center to said feature from an angular velocity ω of said reference beam over said feature and from said times t_r, t_1.

20. The method of claim 19, further comprising adding a non-collinear folded path portion to at least one of said reference path and said first path.

21. The method of claim 19, wherein said step of rotating is performed with at least one element selected from the group consisting of mirrors, refractive elements, diffractive elements and holographic elements.

22. The method of claim 19, wherein said reference path and said first path are arranged in a common plane Σ.

23. The method of claim 19, further comprising endowing said reference beam and said first beam with mutually distinguishing properties.

24. The method of claim 23, wherein said distinguishing properties are selected from the group consisting of polarization, wavelength, temporal beam format and intensity.

25. The method of claim 19, further comprising:

a) launching a second beam on a second path chosen such that said center is along a line of said second path;

b) rotating said second path together with said reference path and said first path about said center such that said second beam moves over said feature at a second time t_2; and

c) determining said angular velocity ω of said reference beam from said times t_r, t_2.

26. The method of claim 25, further comprising endowing said second beam with a distinguishing property.

27. The method of claim 26, wherein said distinguishing property is selected from the group consisting of polarization, wavelength, temporal beam format and intensity.

28. The method of claim 25, wherein said reference path, said first path and said second path are in a common plane Σ.

29. The method of claim 19, further comprising measuring said angular velocity ω with an angular velocity unit.

30. The method of claim 19, wherein said feature is selected from the group consisting of micro-structure and macro-structure.

31. A method for optical determination of distance to a feature, said method comprising:

a) launching a reference beam on a reference path and a first beam on a first path;

b) rotating said reference path and said first path about a center not along a line of said reference path and not along a line of said first path, whereby said reference beam moves over said feature at a reference

time t_r and said first beam moves over said feature at a first time t_1;

c) determining a distance r from said center to said feature from an angular velocity ω of said reference beam over said feature and from said times t_r, t_1.

32. A method for optical determination of distance to a feature, said method comprising:

a) providing a reference path and a first path for a radiation;

b) rotating said reference path and said first path about a center along a line of said reference path and not along a line of said first path, whereby radiation from said feature is detected on said reference path at a reference time t_r and on said first path at a first time t_1;

d) determining a distance r from said center to said feature from an angular velocity ω of said reference path over said feature and from said times t_r, t_1.